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Update: The Boston Harbor Project
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Nearly $1.4 billion of construction is under way on the Boston Harbor Project – an 11-year, $6.1 billion effort to control the pollution of Boston Harbor with new wastewater treatment facilities. Construction is proceeding on four critical elements of the project: a new primary wastewater treatment plant; a nine and one-half mile tunnel that will take treated effluent to the sea; a five-mile tunnel that will convey raw sewage to the new treatment plant; and digesters that will process sludge from the new primary treatment plant. A significant milestone was met on December 24, 1991 when a pelletizing plant that turns sludge into fertilizer opened, ending the dumping of sludge into Boston Harbor.

The $1.4 billion of construction contracts awarded to date have provided work for 200 companies, most of them local. The Boston Harbor Project is a major employer in the local construction and engineering industries. Currently 1,500 people are employed on the project. The project will continue to provide jobs through the 1990s.

The Boston Harbor Project, which is governed by a federal court order, is both on schedule and under budget as it moves into peak construction years. The project has met or bettered 10 major deadlines set by U.S. District Court Judge A. David Mazzone in a long-term scheduling order issued in 1986. All major elements of the project are now either under construction or in the final phase of design.

In March 1992, the MWRA awarded a contract for the Deer Island wastewater treatment plant's second set of primary clarifiers, batteries C and D. Clarifiers are large concrete tanks used to settle solids from sewage during the wastewater treatment process. Completion of the first two batteries of primary clarifiers, A and B, will allow the MWRA to begin operating the new primary treatment plant in July 1994, meeting another court-ordered deadline.

Work is under way on four other contracts totaling more than $200 million in connection with the primary treatment plant: the north system headworks, the north main pump station/Winthrop terminal, the north system tunnels and the south system pump station.

On December 24, 1991 the MWRA met the project's 10th court-ordered milestone with a week to spare: the valve that controlled the passage of sludge from the Deer Island treatment plant to the shallow waters of Boston Harbor was closed and locked. The 400,000 to 500,000 gallons of liquid sludge that were released daily in 30 feet of water less than a mile from shore are now being converted into fertilizer pellets at the new $87 million sludge processing plant at the Fore River Staging Area (the former General Dynamics Shipyard) in Quincy.

The plant converts 60 tons of sludge daily into pellets to be sold as a commercial fertilizer and soil conditioner by Enviro-Gro Technologies of Baltimore. The pellets are currently being used to fertilize citrus crops in Florida and in land reclamation projects in the Midwest. Other potential markets for the pellets include sod farms, golf courses, forestation projects and nurseries.

In August 1991, the MWRA began construction of eight, out of a planned 16, sludge digesters on Deer Island. The $189 million award is the Boston Harbor Project's second largest construction contract. The eight digesters, scheduled for completion in 1994, will process sludge from the new primary wastewater treatment plant now under construction on Deer Island. The eight remaining digesters will be constructed between 1993 and 1999 under two separate contracts.

Construction on the secondary treatment plant, which will provide a higher level of wastewater treatment, is scheduled to begin in January 1993.

Earthwork

Major earthwork on Deer Island was completed in 1991. The MWRA moved two million cubic yards of earth from the center of the island to the island's northern and southern edges in order to create a level platform for construction of the new plant. The new northern landform, landscaped with 6,000 shrubs and trees, shields the residents of the neighboring community of Winthrop from the construction and future operation of a wastewater treatment plant. More than one million cubic yards of excess till have been removed from the island by barge.

Tunnels

Construction is proceeding on more than 15 miles of tunnel on the Boston Harbor Project.

In May, a 600-ton tunnel boring machine (TBM) will begin excavating a nine and one-half mile effluent outfall tunnel below Massachusetts Bay. At 26 and one-half feet in diameter and 40 feet in length, the TBM is one of the largest of its kind ever to operate in New England. A 420-foot shaft for the outfall tunnel has been completed.

A 3,100-ton jack-up barge is being used to drill 55 riser pipes that will eventually connect to the last one and one-quarter miles of the outfall tunnel. To date, 36 riser pipes have been installed. Harsh winter conditions required the suspension of operation in late November 1991. Work will resume in April 1992.

The first of two half-mile long tunnels that are part of the primary treatment plant was completed in October 1991. The second tunnel was completed in February 1992. The tunnels and shafts are currently being lined with concrete.

Construction on the five-mile inter-island tunnel is well under way. Bedrock is being excavated from the Nut Island and Deer Island shafts using the drill-and-blast method. Complete excavation of both shafts is scheduled

Milestones successfully met to date

December 1988 – The Authority stopped dumping scum (floatable pollution, including plastics and grease) from the existing Deer Island plant into the harbor. Scum is now mixed with a cement kiln dust and placed in a landfill. This step has made area harbor waters and beaches noticeably cleaner during the past three years.

February 1990 – Construction began on the sludge processing plant at the Fore River Staging Area (former General Dynamics shipyard) in Quincy.

May 1990 – Electrical power was provided to Deer Island, five months ahead of the October 1990 milestone. A cable capable of providing 70 megawatts of electricity was laid under the harbor floor from South Boston to Deer Island.

June 1990 – The MWRA began operating the project's water transportation system. Barges now make twice-daily trips from the Fore River Staging Area. Ferries bring construction workers to Deer Island from Squantum Point and Rowes Wharf.

August 1990 – Construction began on the effluent outfall tunnel, five months ahead of schedule. Work crews have excavated the 420-foot shaft and will soon begin boring the nine and one-half mile tunnel to Massachusetts Bay.

September 1990 – The Authority completed a facilities plan on the region's combined sewer overflow problem and submitted the plan to the federal judge overseeing the harbor cleanup.

December 1990 – The MWRA awarded a contract for construction of the north system tunnels, the first component of the new primary treatment plant at Deer Island.

April 1991– Construction began on the five-mile tunnel that will convey untreated wastewater from the South Shore to the new plant at Deer Island.

August 1991 – The Authority began construction of the first set of eight sludge digesters. The new egg-shaped digesters will process sludge from the new primary plant.

December 1991– The sludge plant at the Fore River Staging Area began operating, ending the daily discharge of 60 tons of sludge to Boston Harbor.

for early May. The boring of the inter-island tunnel is scheduled to begin from Deer Island in June 1992. The tunnel will be completed in December 1994.

Other construction in progress on Deer Island

Demolition of the Suffolk County House of Correction is under way. In December 1991, more than 800 inmates of the 87-year-old prison were moved to a new Suffolk County jail in the South Bay section of Boston. The prison and other Suffolk County House of Correction buildings are being demolished to make room for the construction of the secondary wastewater treatment plant.

Construction on a pilot wastewater treatment plant on Deer Island began in January 1992. The small-scale primary and secondary wastewater treatment facility, which will be capable of processing two million gallons of wastewater per day, will serve as a model for the new 1.3 billion gallon treatment plant now under construction on Deer Island. Construction will be completed in July 1993.

In addition to a five-mile undersea power cable, which will provide up to 70 megawatts of electricity to the island, other essential construction support is in place, including a concrete batch plant built and operated by Boston Sand & Gravel Co. The plant supplies contractors with all of the concrete necessary for construction at Deer Island. Piers have been built at Deer Island, Nut Island and Squantum Point as part of the project's water transportation system. A seawall on the island's western edge has been repaired and existing tunnels and underground utilities have been reinforced or replaced in anticipation of the movement of heavy equipment. Construction roads and utilities are being installed.

Other progress

The construction of a ferry terminal on the Mystic River in Charlestown will complete the MWRA's water transportation system for the Boston Harbor Project. The terminal will be the final step in providing water transportation for more than half of the project's workforce. Construction of a floating dock and a 300-car parking lot began in early February at the former Revere Sugar Corp. The Charlestown site joins Rowes Wharf in downtown Boston and Squantum Point in Quincy as ferry departure points to Deer Island. The Fore River Staging Area in Quincy serves the Deer Island construction site as a cargo terminal. Construction materials, supplies, equipment and vehicles are barged daily between Fore River and Deer Island.

In May 1991 the Massachusetts Legislature and Gov. William Weld approved legislation transferring to the MWRA 96 acres of land in Walpole for a landfill for debris screened from sewage. The passage of a bill transferring the landfill site to the Authority ended a three-month sewer moratorium imposed by Judge Mazzone. Construction on the landfill is scheduled to begin in January 1993. The landfill will be available for use in April 1994.

In July 1991 the Suffolk County Superior Court upheld the MWRA's decision to site a permanent sludge-to-fertilizer plant at the Authority's Fore River Staging Area in Quincy. The 18-page decision, issued by Justice John C. Cratsley, clears the way for the MWRA to operate the sludge facility beyond 1995. The Authority already had the right to operate the facility from 1991 to 1995 under a 1988 agreement with the City of Quincy.

Upcoming Boston Harbor Project Milestones

January 1993 – Construction to begin on secondary treatment plant.

July 1994 – Half of primary treatment plant completed. Operation begins.

December 1994 – Inter-island tunnel completed.

July 1995 – Primary treatment plant completed.

July 1995 – Effluent outfall tunnel completed. Operation begins.

October 1996 – One-quarter of secondary plant completed. Operation begins.

June 1998 – Half of secondary treatment plant completed.

December 1999 – Entire secondary treatment plant completed.